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Control Number: PS36

Category: NSPS
EPA Office: ESD
Date: 11/17/1992
Title: Process Dryers Applicability
Recipient: Regions
Author: Jordan, Bruce C.
Comments:

Subparts: Part 60, Db	Indust.-Comm.-Inst. Steam Gen. Units
Part 60, Dc	Small Indust.-Comm.-Inst. Steam Gen. Units

References: 60.40b
60.40c
60.41b
60.41c

Abstract:

Are process dryers or kiln subject to Subparts Db or Dc?

Subparts Db and Dc do not apply to process dryers or kilns as they do not transfer heat from the combustion gases to a heat transfer medium across a physical barrier as a steam generating unit would.

Letter:

Control Number: PS36

November 17, 1992

MEMORANDUM

SUBJECT: Applicability of NSPS Subparts Db/Dc to Process Dryers

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FROM: Bruce Jordan, Director
Emission Standards Division (MD-13)
Office of Air Quality Planning and Standards

TO: See Below

Questions have been raised recently concerning the applicability of the new source performance standards (NSPS) for steam generating units (40 CFR Part 60, Subparts Db and Dc) to process dryers and various types of kilns, such as cement kilns. Subparts Db and Dc do not apply to process dryers or kilns.

A steam generating unit is defined under Subparts Db and Dc as any device which combusts any fuel to produce steam, heat water, or heat any heat transfer medium. A heat transfer medium is defined as any material used for transferring heat from one point to another point (\pm 60.41b and \pm 60.41c).

Although steam generating units are frequently used to generate steam, as the term implies, it is not uncommon to find these same types of devices used to heat water, air, or other heat transfer mediums (e.g., Dowtherm) to provide space heating or process heating. As a result, the definition of steam generating unit was intentionally made quite broad in Subparts Db and Dc so the NSPS would not be limited solely to units generating steam.

There are a number of similarities between steam generating units and process dryers or kilns. Both combust fuel. In addition, process dryers frequently "transfer" heat to a heat transfer medium. Normally this is ambient air introduced into the combustion gases following combustion to reduce the temperature of the gases to the level necessary for proper drying of the material(s) being dried. It is much less common for kilns to transfer heat to a heat transfer medium. Normally the combustion gases are passed directly over or through the material(s) being dried or preheated and no heat transfer medium is involved.

On the other hand, there are a number of differences, particularly in design and appearance, between steam generating units and process dryers or kilns. Steam generating units, whether they are used to generate steam or heat water, air, or other heat transfer mediums are similar in design and tend to look much the same. Process dryers and kilns, however, are quite different in design than steam generating units and generally look very different.

The key to distinguishing between a steam generating unit and a process dryer or kiln, however, is the method of heat transfer between the combustion gases and the heat transfer medium (if a heat transfer medium is involved). In a steam generating unit there is a physical barrier between the combustion gases and the heat transfer medium (e.g., the waterwall or tubes in the steam generating unit). Thus, there is no direct contact or intermixing of the combustion gases and the heat transfer medium.

As a result, devices which combust fuel and transfer heat from the combustion gases to a heat transfer medium across a physical barrier which prevents direct contact or intermixing of the combustion gases and the heat transfer medium are considered steam generating units under Subparts Db and Dc. Devices which either (1) combust fuel but do not transfer heat from the combustion gases to a heat transfer medium or (2) transfer heat to heat transfer medium by direct contact or intermixing of the combustion gases and the heat transfer medium are not considered steam generating units under Subparts Db and Dc. Process dryers and kilns fall into this latter category and, as a result, Subparts Db and Dc do not apply to these types of combustion devices.

This response has been coordinated with the Office of General Counsel and the Stationary Source Compliance Division. If you have any questions, please call Rick Copland at (919) 541-5265.

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Last updated on Friday, February 24th, 2006
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